What is claimed is:

1. A dendritic cell-specific polynucleotide comprising a nucleotide sequence of SEQ ID NOs:1, 3, 4, 5 or 6.

2. A dendritic cell-specific polypeptide encoded by a nucleotide sequence of SEQ ID NOs:1, 3, 4, 5 or 6.

3. A method for detecting a dendritic cell comprising the steps of:

(a) hybridizing a DNA obtained from a cell or its fragment with a dendritic cell-specific nucleotide sequence; and

(b) verifying the occurrence of the hybridization;

wherein said dendritic cell-specific nucleotide sequence is selected from the group consisting of myosin phosphatase target subunit 1 gene, CD20-like precursor gene, Ig superfamily protein gene, glycoprotein nmb gene, 5-lipoxygenase activating protein gene, dihydropyrimidinase related protein-2 gene, cystatin A gene, Immunoglobulin transcription factor 2 gene, transforming growth factor beta-induced 68kD gene, myeloid DAP12-associating lectin gene, B cell linker protein gene, activated RNA polymerase II transcription cofactor 4 gene, enolase 1 alpha gene, 90 kDa heat shock protein gene, accessory proteins BAP31/BAP29 gene, isocitrate dehydrogenase 3 (NAD^+) alpha gene, microsomal glutathione S-transferase 2 gene, GABA(A) receptor-associated protein gene, nicastrin gene, purinergic receptor (family A group 5) gene, Rho GDP dissociation inhibitor beta gene, MAD homolog 2 gene, MLN51 gene, interferon regulatory factor 4 gene, the fragments of these genes, a polynucleotide of SEQ ID NO:1 or its fragment, a polynucleotide of SEQ ID NO:2 or its

fragment, a polynucleotide of SEQ ID NO:3 or its fragment, a polynucleotide of SEQ ID NO:4 or its fragment, a polynucleotide of SEQ ID NO:5 or its fragment, a polynucleotide of SEQ ID NO:6 or its fragment and the combination thereof.

4. A method for identifying a lymphoid $CD11c^-$ dendritic cell comprising the steps of:

(a) hybridizing a DNA obtained from a cell or its fragment with a $CD11c^-$ dendritic cell-specific nucleotide sequence; and

(b) verifying the occurrence of the hybridization;

wherein said lymphoid $CD11c^-$ dendritic cell-specific nucleotide sequence is selected from the group consisting of 5-lipoxygenase activating protein gene or its fragment, dihydropyrimidinase related protein-2 gene or its fragment, interferon regulatory factor 4 gene or its fragment and the combination thereof.

5. A method for identifying a myeloid monocyte-derived dendritic cell comprising the steps of:

(a) hybridizing a DNA obtained from a cell or its fragment with a myeloid monocyte-derived dendritic cell-specific nucleotide sequence; and

(b) verifying the occurrence of the hybridization;

wherein said myeloid monocyte-derived dendritic cell-specific nucleotide sequence is selected from the group consisting of thymus and activation-regulated chemokine gene or its fragment, dihydropyrimidinase related protein-2 gene or its fragment, lysosomal acid lipase gene or its fragment,

calmodulin gene or its fragment, interferon regulatory factor 4 gene or its fragment, DC-Lamp gene or its fragment and the combination thereof.

6. A method for identifying a myeloid $CD1a^+$ dendritic cell comprising the steps of:

(a) hybridizing a DNA obtained from a cell or its fragment with a myeloid $CD1a^+$ dendritic cell-specific nucleotide sequence; and

(b) verifying the occurrence of the hybridization;

wherein said myeloid $CD1a^+$ dendritic cell-specific nucleotide sequence is selected from the group consisting of a polynucleotide of SEQ ID NO:2 or its fragment, a polynucleotide of SEQ ID NO:3 or its fragment, a polynucleotide of SEQ ID NO:5 or its fragment, S100 calcium-binding protein beta gene or its fragment, matrix metalloproteinase 12 gene or its fragment, thymus and activation-regulated chemokine gene or its fragment, CD1B antigen gene or its fragment, CD20-like precursor gene or its fragment, MHC class II HLA-DQ-alpha chain gene or its fragment, osteopontin gene or its fragment, 5-lipoxygenase activating protein gene or its fragment, monocyte chemotactic proteins 4 gene or its fragment, lysosomal acid lipase gene or its fragment, cystatin A gene or its fragment, annexin A2 gene or its fragment, vesicle-associated membrane protein 8 gene or its fragment, MHC class II HLA-DM-alpha chain gene or its fragment, DORA protein gene or its fragment, DC-Lamp gene or its fragment, Mannose receptor (CD206) gene or its fragment, Langerin (CD207) gene or its fragment and the combination thereof.

7. A method for identifying a myeloid $CD14^+$ dendritic cell comprising the steps of:

(a) hybridizing a DNA obtained from a cell or its fragment with a myeloid $CD14^+$ dendritic cell-specific nucleotide sequence; and

(b) verifying the occurrence of the hybridization;

wherein said myeloid $CD14^+$ dendritic cell-specific nucleotide sequence is selected from the group consisting of a polynucleotide of SEQ ID NO:2 or its fragment, S100 calcium-binding protein beta gene or its fragment, myosin phosphatase target subunit 1 gene or its fragment, CD20-like precursor gene or its fragment, Ig superfamily protein gene or its fragment, glycoprotein nmb gene or its fragment, osteopontin gene or its fragment, 5-lipoxygenase activating protein gene or its fragment, mannose receptor C type 1 gene or its fragment, monocyte chemotactic proteins 4 gene or its fragment, RNase A family 1 (RNas1) gene or its fragment, lysosomal acid lipase gene or its fragment, cystatin A gene or its fragment, monocyte chemotactic proteins 1 (MCP 1) gene or its fragment, transforming growth factor beta-induced 68kD gene or its fragment, ferritin light polypeptide gene or its fragment, vesicle-associated membrane protein 8 gene or its fragment, Mannose receptor (CD206) gene or its fragment and the combination thereof.

8. A method for identifying a maturation stage of a lymphoid $CD11c^-$ dendritic cell comprising the steps of:

(a) hybridizing a DNA obtained from a cell or its fragment with an interferon regulatory factor 4 gene or its

fragment; and

(b) verifying the occurrence of the hybridization.

9. A method for identifying a maturation stage of a myeloid monocyte-derived dendritic cell comprising the steps of:

(a) hybridizing a DNA obtained from a cell or its fragment with a nucleotide sequence; and

(b) verifying the occurrence of the hybridization;

wherein said nucleotide sequence is selected from the group consisting of thymus and activation-regulated chemokine gene or its fragment, dihydropyrimidinase related protein-2 gene or its fragment, interferon regulatory factor 4 gene or its fragment, DC-Lamp gene or its fragment and the combination thereof.

10. A method for identifying a maturation stage of a myeloid $CD1a^+$ dendritic cell comprising the steps of:

(a) hybridizing a DNA obtained from a cell or its fragment with a nucleotide sequence; and

(b) verifying the occurrence of the hybridization;

wherein said nucleotide sequence is selected from the group consisting of a polynucleotide of SEQ ID NO:2 or its fragment, a polynucleotide of SEQ ID NO:3 or its fragment, a polynucleotide of SEQ ID NO:5 or its fragment, S100 calcium-binding protein beta gene or its fragment, matrix metalloproteinase 12 gene or its fragment, thymus and activation-regulated chemokine gene or its fragment, CD1B antigen gene or its fragment, CD20-like precursor gene or its fragment, MHC class II HLA-DQ-alpha chain gene or its fragment, osteopontin gene or its fragment, monocyte

chemotactic proteins 4 gene or its fragment, lysosomal acid lipase gene or its fragment, cystatin A gene or its fragment, transforming growth factor beta-induced 68kD gene or its fragment, annexin A2 gene or its fragment, vesicle-associated membrane protein 8 gene or its fragment, DORA protein gene or its fragment, DC-Lamp gene or its fragment, Langerin (CD207) gene or its fragment and the combination thereof.

11. A method for identifying a maturation stage of a myeloid $CD14^+$ dendritic cell comprising the steps of:

(a) hybridizing a DNA obtained from a cell or its fragment with a nucleotide sequence; and

(b) verifying the occurrence of the hybridization;

wherein said nucleotide sequence is selected from the group consisting of a polynucleotide of SEQ ID NO:2 or its fragment, S100 calcium-binding protein beta gene or its fragment, CD20-like precursor gene or its fragment, Ig superfamily protein gene or its fragment, glycoprotein nmb gene or its fragment, osteopontin gene or its fragment, 5-lipoxygenase activating protein gene or its fragment, mannose receptor C type 1 gene or its fragment, monocyte chemotactic proteins 4 gene or its fragment, RNase A family 1 gene or its fragment, lysosomal acid lipase gene or its fragment, cystatin A gene or its fragment, monocyte chemotactic proteins 1 gene or its fragment, transforming growth factor beta-induced 68kD gene or its fragment, ferritin light polypeptide gene or its fragment, vesicle-associated membrane protein 8 gene or its fragment, Mannose receptor (CD206) gene or its fragment and the combination thereof.

12. A microarray for detecting a dendritic cell comprising a dendritic cell-specific nucleotide sequence immobilized on a solid surface;

wherein said dendritic cell-specific nucleotide sequence is selected from the group consisting of myosin phosphatase target subunit 1 gene, CD20-like precursor gene, Ig superfamily protein gene, glycoprotein nmb gene, 5-lipoxygenase activating protein gene, dihydropyrimidinase related protein-2 gene, cystatin A gene, Immunoglobulin transcription factor 2 gene, transforming growth factor beta-induced 68kD gene, myeloid DAP12-associating lectin gene, B cell linker protein gene, activated RNA polymerase II transcription cofactor 4 gene, enolase 1 alpha gene, 90 kDa heat shock protein gene, accessory proteins BAP31/BAP29 gene, isocitrate dehydrogenase 3 (NAD^+) alpha gene, microsomal glutathione S-transferase 2 gene, GABA(A) receptor-associated protein gene, nicastrin gene, purinergic receptor (family A group 5) gene, Rho GDP dissociation inhibitor beta gene, MAD homolog 2 gene, MLN51 gene, interferon regulatory factor 4 gene, the fragments of these genes, a polynucleotide of SEQ ID NO:1 or its fragment, a polynucleotide of SEQ ID NO:2 or its fragment, a polynucleotide of SEQ ID NO:3 or its fragment, a polynucleotide of SEQ ID NO:4 or its fragment, a polynucleotide of SEQ ID NO:5 or its fragment, a polynucleotide of SEQ ID NO:6 or its fragment and the combination thereof.

13. A microarray for identifying a lymphoid $CD11c^-$ dendritic cell comprising a lymphoid $CD11c^-$ dendritic cell-specific nucleotide sequence immobilized on a solid surface;

wherein said lymphoid CD11c$^-$ dendritic cell-specific nucleotide sequence is selected from the group consisting of 5-lipoxygenase activating protein gene or its fragment, dihydropyrimidinase related protein-2 gene or its fragment, interferon regulatory factor 4 gene or its fragment and the combination thereof.

14. A microarray for identifying a myeloid monocyte-derived dendritic cell comprising a myeloid monocyte-derived dendritic cell-specific nucleotide sequence immobilized on a solid surface;

wherein said myeloid monocyte-derived dendritic cell-specific nucleotide sequence is selected from the group consisting of thymus and activation-regulated chemokine gene or its fragment, dihydropyrimidinase related protein-2 gene or its fragment, lysosomal acid lipase or its fragment, calmodulin gene or its fragment, interferon regulatory factor 4 gene or its fragment, DC-Lamp gene or its fragment and the combination thereof.

15. A microarray for identifying a myeloid CD1a$^+$ dendritic cell comprising a myeloid CD1a$^+$ dendritic cell-specific nucleotide sequence immobilized on a solid surface;

wherein said myeloid CD1a$^+$ dendritic cell-specific nucleotide sequence is selected from the group consisting of a polynucleotide of SEQ ID NO:2 or its fragment, a polynucleotide of SEQ ID NO:3 or its fragment, a polynucleotide of SEQ ID NO:5 or its fragment, S100 calcium-binding protein beta gene or its fragment, matrix metalloproteinase 12 gene or its fragment, thymus and

activation-regulated chemokine gene or its fragment, CD1B antigen gene or its fragment, CD20-like precursor gene or its fragment, MHC class II HLA-DQ-alpha chain gene or its fragment, osteopontin gene or its fragment, 5-lipoxygenase activating protein gene or its fragment, monocyte chemotactic proteins 4 gene or its fragment, lysosomal acid lipase gene or its fragment, cystatin A gene or its fragment, annexin A2 gene or its fragment, vesicle-associated membrane protein 8 gene or its fragment, MHC class II HLA-DM-alpha chain gene or its fragment, DORA protein gene or its fragment, DC-Lamp gene or its fragment, Mannose receptor (CD206) gene or its fragment, Langerin (CD207) gene or its fragment and the combination thereof.

16. A microarray for identifying a myeloid $CD14^+$ dendritic cell comprising a myeloid $CD14^+$ dendritic cell-specific nucleotide sequence immobilized on a solid surface;

wherein said myeloid $CD14^+$ dendritic cell-specific nucleotide sequence is selected from the group consisting of a polynucleotide of SEQ ID NO:2 or its fragment, S100 calcium-binding protein beta gene or its fragment, myosin phosphatase target subunit 1 gene or its fragment, CD20-like precursor gene or its fragment, Ig superfamily protein gene or its fragment, glycoprotein nmb gene or its fragment, osteopontin gene or its fragment, 5-lipoxygenase activating protein gene or its fragment, mannose receptor C type 1 gene or its fragment, monocyte chemotactic proteins 4 gene or its fragment, RNase A family 1 (RNas 1) gene or its fragment, lysosomal acid lipase gene or its fragment, cystatin A gene or its fragment, monocyte chemotactic proteins 1 (MCP 1) gene or

its fragment, transforming growth factor beta-induced 68kD gene or its fragment, ferritin light polypeptide gene or its fragment, vesicle-associated membrane protein 8 gene or its fragment, Mannose receptor (CD206) gene or its fragment and the combination thereof.

17. A microarray for identifying a maturation stage of a lymphoid $CD11c^-$ dendritic cell comprising an interferon regulatory factor 4 gene or its fragment immobilized on a solid surface.

18. A microarray for identifying a maturation stage of a myeloid monocyte-derived dendritic cell comprising a nucleotide sequence immobilized on a solid surface;

wherein said nucleotide sequence is selected from the group consisting of thymus and activation-regulated chemokine gene or its fragment, dihydropyrimidinase related protein-2 gene or its fragment, interferon regulatory factor 4 gene or its fragment, DC-Lamp gene or its fragment and the combination thereof.

19. A microarray for identifying a maturation stage of a myeloid $CD1a^+$ dendritic cell comprising a nucleotide sequence immobilized on a solid surface;

wherein said nucleotide sequence is selected from the group consisting of a polynucleotide of SEQ ID NO:2 or its fragment, a polynucleotide of SEQ ID NO:3 or its fragment, a polynucleotide of SEQ ID NO:5 or its fragment, S100 calcium-binding protein beta gene or its fragment, matrix metalloproteinase 12 gene or its fragment, thymus and

activation-regulated chemokine gene or its fragment, CD1B antigen gene or its fragment, CD20-like precursor gene or its fragment, MHC class II HLA-DQ-alpha chain gene or its fragment, osteopontin gene or its fragment, monocyte chemotactic proteins 4 gene or its fragment, lysosomal acid lipase gene or its fragment, cystatin A gene or its fragment, transforming growth factor beta-induced 68kD gene or its fragment, annexin A2 gene or its fragment, vesicle-associated membrane protein 8 gene or its fragment, DORA protein gene or its fragment, DC-Lamp gene or its fragment, Langerin (CD207) gene or its fragment and the combination thereof.

20. A microarray for identifying a maturation stage of a myeloid $CD14^+$ dendritic cell comprising a nucleotide sequence immobilized on a solid surface;

wherein said nucleotide sequence is selected from the group consisting of a polynucleotide of SEQ ID NO:2 or its fragment, S100 calcium-binding protein beta gene or its fragment, CD20-like precursor gene or its fragment, Ig superfamily protein gene or its fragment, glycoprotein nmb gene or its fragment, osteopontin gene or its fragment, 5-lipoxygenase activating protein gene or its fragment, mannose receptor C type 1 gene or its fragment, monocyte chemotactic proteins 4 gene or its fragment, RNase A family 1 gene or its fragment, lysosomal acid lipase gene or its fragment, cystatin A gene or its fragment, monocyte chemotactic proteins 1 gene or its fragment, transforming growth factor beta-induced 68kD gene or its fragment, ferritin light polypeptide gene or its fragment, vesicle-associated membrane protein 8 gene or its fragment, Mannose receptor (CD206) gene or its fragment and the

combination thereof.